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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* KUK HO BAE and KWANG CHUL JU

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Appeal 2009-012998
Application 09/709,574
Technology Center 3700

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Before: LINDA E. HORNER, STEVEN D.A. McCARTHY, and MICHAEL W. O'NEILL, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

Kuk Ho Bae and Kwang Chul Ju (Appellants) seek our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM-IN-PART.

## THE INVENTION

Appellants' claimed invention relates to "a game service for transferring a game program desired by a user to the user's digital television so that the user can execute the game." Spec. 1, ll. 4-5. Claim 1, reproduced below, is representative of the subject matter on appeal.[1]

1. A game service system, comprising:

a game service transmitting device, comprising:

a multiplexer configured to convert image information and audio information of a broadcast signal, a game program, and game-related information into a transport stream, and

a transmitting unit configured to channel-code, modulate, amplify, and transmit the transport stream; and

a game service receiving device, comprising:

a tuning unit configured to receive the image and audio information of the broadcast signal, a game program ordered by a user, and game-related information, and to select either the image and audio information corresponding to a broadcast

[1] Claims 2, 3, 5, 9, 14, 16, and 20 are also independent claims. Claims 2, 5, 9, and 20 are directed to a game service device. Claim 3 is directed to a game server system. Claims 14 and 16 are directed to a game service method.

channel desired by the user, or the game program ordered by the user; and

a common game interface module configured to demodulate a selected game program and game-related information, to error correct the demodulated information, to download the game program and store the game program in a game memory portion of the common game interface unit for access by a user when desired, and to process the game-related information.

THE EVIDENCE

The Examiner relies upon the following evidence:

| | | |
|---|---|---|
| Okamoto | US 5,489,103 | Feb. 6, 1996 |
| McMullan | US 5,654,746 | Aug. 5, 1997 |
| Tarr | US 5,935,004 | Aug. 10, 1999 |
| Vance | US 6,267,672 B1 | Jul. 31, 2001 |

THE REJECTIONS

Appellants seek review of the following rejections:

1. The Examiner rejected claims 1-8, 14, 16, 18, and 20 under 35 U.S.C. § 102(b) as being anticipated by McMullan.
2. The Examiner rejected claims 9-13 under 35 U.S.C. § 103(a) as being unpatentable over McMullan and Tarr.
3. The Examiner rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over McMullan and Vance.
4. The Examiner rejected claims 17 and 19 under 35 U.S.C. § 103(a) as being unpatentable over McMullan and Okamoto.

## ISSUES

Appellants argue that "McMullan makes use of frequency division multiplexing to transport multiple different transport streams on their own separate frequencies" and thus McMullan's structure is not capable of using time-division multiplexing to encode image and audio information for a broadcast program, and game programs, and game program information into a single transport stream, as called for in the independent claims. Reply Br. 2. Appellants further argue that McMullan's "game player 178 is not a receiver configured to receive a regular broadcast signal" and that its "home game adapter 177 and the tuner/demodulator 202 are disclosed as providing demodulated game data streams, but not the broadcast programming signals." App. Br. 14.

The issues presented by this appeal are:

Is the structure disclosed in McMullan capable of performing the functions recited in the independent apparatus claims 1-3, 5, 9, and 20?

Does McMullan disclose all of the steps called for in the independent method claims 14 and 16?

## FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence.

1. Appellants' Specification defines "transport stream" as "a digital signal that may include images, audio, data and broadcast information, all of which are multiplexed by packet unit on a time basis." Spec. 2, ll. 3-5.

2. Appellants' Specification describes, with reference to Figure 3, that "multiplexer 106 converts the packetized image and audio information, the game program and the game-related information into a transport stream and outputs it to an encoding unit 107." Spec. 8, ll. 17-19 *see also* Spec. 11, ll. 6-8 ("The transport stream is a digital signal which includes the image, audio and game data, multiplexed by packet unit on a time basis.").
3. Appellants' Specification further describes that a user can select a certain channel or select a particular game via user interface 210, and based on the signal from the user interface, a microcomputer 209 outputs either a first control signal to select a broadcast signal of the channel desired by the user or a second control signal to order a game, and a tuning unit 201 receives the first control signal and selects either a broadcast signal of the channel selected by the user or a game program and associated information related to a game received in the transport stream. Spec. 9, ll. 6-15; fig. 3.
4. McMullan discloses a digital music and game delivery service that modulates digital music and game data with other frequency division multiplexed services (television, telecommunications, game or software or other services) and delivers the service to the subscriber's home. McMullan, col. 3, ll. 47-58; fig. 1.
5. McMullan discloses that "[a]t combiner 155, the game signals on a first (or more) frequency division multiplexed channel are combined with other service channels such as digital music, cable

television, telecommunications, computer software channels and the like" and that "[a]ll of these signals are then transmitted via cable distribution plant 156 to a subscriber location 175." McMullan, col. 5, ll. 33-39; fig. 1.

6. McMullan discloses that at the subscriber location 175, a "[g]ame adapter 177 comprises an RF input 201 for receiving a broadband of radio frequencies extending in accordance with present technologies into the range of 1-2 gigahertz in bandwidth" and a "tuner/demodulator 202 tunes to one or more of these frequencies, in particular, a channel on which game data is multiplexed and transmitted as QPR modulated data, for example, on a frequency in the FM band (for example, between 80 and 110 megaHertz)." McMullan, col. 6, ll. 40-47; fig. 2.

7. McMullan discloses that "[t]ypically, the game delivery service signals are frequency division multiplexed at a selected channel in the 50-150 megahertz range but may, optionally be provided anywhere in a 0-2 gigahertz optical fiber cable television spectrum." McMullan, col. 5, ll. 43-46.

8. McMullan further discloses that "tuner/demodulator 202 is programmable and comprises a known frequency synthesizer integrated circuit," and that "ASIC 200 . . . can program the tuner to tune to any particular frequency within a range, for example, of 50-150 megaHertz." McMullan, col. 6, ll. 55-63.

ANALYSIS

*Claim 1*

Independent claim 1 calls for a game service system comprising: (1) a game service transmitting device that includes "a multiplexer configured to convert image information and audio information of a broadcast signal, a game program, and game-related information into a transport stream;" and (2) a game service receiving device that includes "a tuning unit configured to receive the image and audio information of the broadcast signal, a game program ordered by a user, and game-related information, and to select either the image and audio information corresponding to a broadcast channel desired by the user, or the game program ordered by the user."

Appellants' Specification defines "transport stream" as a digital signal including information multiplexed by packet unit on a time basis (Facts 1-3). As such, a person skilled in the art would understand claim 1, when read in light of Appellants' Specification, to call for a transmitting device capable of multiplexing image and audio information of a broadcast signal, a game program, and game-related information by packet unit on a time basis into a transport stream.

We agree with Appellants (App. Br. 12) that McMullan discloses a transmitting device that multiplexes based on frequency division (Facts 4-8). We do not find disclosure in McMullan of any structure capable of converting the image information and audio information of a broadcast signal, a game program, and game-related information into a transport

stream as called for in claim 1. As such, McMullan does not anticipate claim 1.

*Claims 2-4*

Independent claim 2 calls for a game service transmitting device that includes "a multiplexer configured to convert image and audio information of a broadcast signal, a game program, and game-related information by packet unit on a time basis into a transport stream." Independent claim 3 calls for a game server system comprising a similar game service transmitting device that includes the same multiplexer as called for in claim 2. As such, claims 2 and 3 explicitly recite that the information of the broadcast signal, a game program, and game-related information are multiplexed by packet unit on a time basis into a transport stream.

We agree with Appellants (App. Br. 12) that McMullan discloses a transmitting device that multiplexes based on frequency division (Facts 4-8). We do not find disclosure in McMullan of any structure capable of image and audio information of a broadcast signal, a game program, and game-related information by packet unit on a time basis into a transport stream as called for in claims 2 and 3. As such, McMullan does not anticipate these claims, or claim 4, which depends from claim 3.

*Claims 5-8*

Independent claim 5 calls for a game service receiving device that includes "a tuning unit configured to receive image and audio information of a broadcast signal, a game program ordered by a user, and game-related information, and configured to select either the image and audio information

corresponding to a channel desired by a user, or a game program ordered by the user." Independent claim 5 does not limit its receiving and selecting functions to a time division multiplexed transport stream. As such, we agree with the Examiner that McMullan anticipates claim 5.

In particular, McMullan discloses that the frequency division multiplexed signals that include game signals and cable television signals are transmitted to a subscriber location 175 and that ASIC 200 can program the tuner to tune to any particular frequency within a range, for example, of 50-150 megaHertz (Facts 5, 8). As such, the Examiner had a reasonable basis for finding that McMullan's home game adapter 177 is capable of receiving signals of broadcasts, game programs, and game-related information, albeit frequency-division multiplexed, and is further capable of selecting from among these signals via tuner/demodulator 202 by tuning to the proper frequency. Appellants admit that McMullan discloses "a terminal in the form of a game service home adapter [that] receives . . . frequency multiplexed signals" and is "able to tune to a particular frequency to thereby receive one of the broadcast channels, one of the music channels or one of the game channels." App. Br. 12. Further, while Appellants' argue that "the home game adapter 177 and the tuner demodulator 202 are disclosed as providing demodulated game data streams, but not the broadcast programming signals" (App. Br. 14), Appellants failed to adequately explain why the Examiner erred in finding that McMullan's home game adapter is capable of receiving and demodulating the broadcast programming signals.

A patent applicant is free to recite features of an apparatus either structurally or functionally. *See In re Swinehart*, 439 F.2d 210, 212 (CCPA 1971) ("[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims."). "Yet, choosing to define an element functionally, i.e., by what it does, carries with it a risk." *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). As stated in *Swinehart*, 439 F.2d at 213:

> where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Where, as here, the Patent Office has reason to believe that a functional limitation is an inherent characteristic of the prior art, Appellants have the burden to show that the prior art does not possess that characteristic. *See In re Best*, 562 F.2d 1252, 1254-55 (CCPA 1977) (quoting *Swinehart*, 439 F.2d at 212-13); *see also In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) ("when the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." (citations omitted)).

Appellants failed to meet this burden. Accordingly, we sustain the rejection of claim 5 as anticipated by McMullan, and its dependent claims 6-8, which Appellants do not separately argue. App. Br. 16.

*Claims 9-13*

Independent claim 9 calls for a game service receiving device comprising "a processor configured to . . . output either a first control signal to select a broadcast signal of a channel desired by a user, or a second control signal to order a game desired by the user" and "a common game interface module configured to receive the first control signal and to demodulate a broadcast signal of a channel selected by the user, a game program, and game-related information." Independent claim 9 does not limit its receiving and demodulating functions to a time division multiplexed transport stream. As such, we agree with the Examiner that McMullan anticipates claim 9.

As we found *supra* in our analysis of claim 5, the Examiner had a reasonable basis for finding that McMullan's home game adapter 177 is capable of receiving signals of broadcasts, game programs, and game-related information, albeit frequency-division multiplexed, and is further capable of demodulating a broadcast signal of a channel selected by the user, a game program, and game related information (Facts 5, 8). For the same reasons discussed *supra* in our analysis of claim 5, Appellants have not met their burden of showing how the Examiner erred in this finding. Appellants also did not present any arguments contesting the Examiner's findings as to the scope and content of Tarr or the Examiner's proposed combination of the teachings of McMullan and Tarr. App. Br. 17 (arguing only that "Tarr fails to overcome the deficiencies in McMullan"). Appellants also did not present any arguments for separate patentability of claims 10-13, which

depend from claim 9. *Id.* Accordingly, we sustain the Examiner's rejection of claims 9-13 as being unpatentable over McMullan and Tarr.

*Claims 14 and 15*

Independent claim 14 calls for a game service transmitting method that includes the step of "converting image and audio information of a broadcast signal, a game program, and game-related information by packet unit on a time basis into a transport stream." As such, method claim 14 calls for converting information using time division multiplexing. As we found *supra*, McMullan uses frequency division multiplexing (Facts 4-8) and thus does not anticipate this converting step as called for in claim 14. As such, McMullan does not anticipate this claim.

The rejection of claim 15, which depends from claim 14, relies on the same erroneous finding as to the scope and content of McMullan. The Examiner relies on Vance to teach adding a new game program and game-related information to a previously established game list. Ans. 7. This teaching does not cure the deficiency in McMullan. As such, we cannot sustain the rejection of claim 15 under 35 U.S.C. § 103(a) as being unpatentable over McMullan and Vance.

*Claims 16-19*

Independent claim 16 calls for a game service receiving method that includes the step of "extracting a game list comprising game-related information from a transport stream that includes time basis multiplexed packet units of image and audio information of a broadcast signal, a listing of game programs, and game-related information." As such, method claim

16 calls for extracting a game list from time division multiplexed information. As we found *supra*, McMullan's game adapter 177 is configured to extract game data from signals based on frequency, and not from a transport stream that includes time basis multiplexed packet units of image and audio information of a broadcast signal, a listing of game programs, and game-related information (Facts 4-8). Thus, McMullan does not disclose the claimed extracting step, and does not anticipate claim 16 or its dependent claim 18.

The rejection of claims 17 and 19, which depend from claim 16, relies on the same erroneous finding as to the scope and content of McMullan. The Examiner relies on Okamoto to show a system in which a user can request a game when the game is not included in the extracted game list. Ans. 8. This teaching does not cure the deficiency in McMullan. Further, while Okamoto discloses a terminal modem 3 that includes a modulator/demodulator 3a and video tuner 3b which selects a channel of the image to be projected (Okamoto, col. 4, ll. 64-67; fig. 1), Okamoto does not appear to teach extracting a game list from a transport stream that includes time basis multiplexed packet units, as called for in independent claim 16. As such, we cannot sustain the rejection of claims 17 and 19 under 35 U.S.C. § 103(a) as being unpatentable over McMullan and Okamoto.

*Claim 20*

Independent claim 20 calls for a broadcast and game receiving device comprising "a downloader configured to receive a transport stream having time basis multiplexed packet units of image and audio information of a

broadcast signal of a channel, a game program, and game-related information, and to download a game program ordered by a user using the game-related information encoded with the image and audio information of the broadcast signal."

A person skilled in the art would understand independent claim 20, when read in light of Appellants' Specification, to call for a downloader capable of receiving a transport stream having time basis multiplexed packet units of image and audio information of a broadcast signal of a channel, a game program, and game-related information and capable of downloading a game program ordered by a user using the game-related information encoded with the image and audio information of the broadcast signal. As we found *supra*, McMullan's game adapter 177 is configured to download a game program ordered by a user based on frequency, and not using game-related information encoded with the image and audio information of the broadcast signal (Facts 4-8). As such, we cannot sustain the rejection of claim 20 as being anticipated by McMullan.

## CONCLUSIONS

The structure disclosed in McMullan is not capable of performing the functions recited in independent apparatus claims 1-3 and 20. McMullan discloses, however, structure capable of performing the functions recited in independent apparatus claims 5 and 9.

McMullan fails to disclose all of the steps called for in independent method claims 14 and 16.

## DECISION

The decision of the Examiner to reject claims 1-4 and 14-20 is REVERSED. The decision of the Examiner to reject claims 5-13 is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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